REGION 4 STRATEGIC AGRICULTURAL INITIATIVE GRANT PROJECTS

1998-2002

FY 98

Project No.: X98454598

The B.F. Smith Foundation Delta Farmers Advocating Resources Management (FARM) Project ($65K) - A multi-partner (Mississippi Department of Agriculture and Commerce, Mississippi Department of Environmental Quality, Mississippi Association of Conservation Districts, Mississippi Water Management Districts, United States Department of Agriculture/Natural Conservation Resource Service, the United States Environmental Protection Agency (EPA), Mississippi Farm Bureau, Delta Council, Delta Wildlife, Careful by Nature, Delta farmers/growers, et. al) and multi-media pollution prevention project designed to evaluate farms/farming practices in the Delta Region of Mississippi with respect to use of use of best management practices such as integrated pest management, pesticide safety and risk reduction measures, soil and water conservation measures, improved handling and storage of hazardous materials and solid waste management. **Results**: Since its inception, Delta F.A.R.M. acres have grown from an initial membership of 161,000 acres to over 500,000 acres. Farmer progress over time in the adoption of specific best management practices has been measured. **Status**: Project completed. Final report posted on Region 4 Pesticide home page..

Project No.: X98461598

The North Carolina Peanut Project: "On-Farm Research on Pesticide Alternatives in Peanut Production and Methods of Implementation" ($70K) - A multi-partner (North Carolina State University, Rural Advancement Foundation International (RAFI)-USA, EPA, North Carolina Peanut Growers Association, Inc., and North Carolina peanut growers) project to conduct on-farm research on alternative pest management practices in peanut production in North Carolina with a focus on developing alternative pest management strategies for peanuts that will result in pesticide use/risk reduction and alternatives for chemicals most likely to be affected by FQPA (OPs and carbamates). The objectives of this project are to provide technical assistance to farmers to facilitate implementation of economically viable alternatives to current pesticide use/pest management methods in peanut production in North Carolina, and to develop a model for such efforts which can be replicated in other areas and/or commodities which should help lead to a safer food supply by reducing pesticide uses and risks. This project will also assist the agricultural community by developing transitional strategies that may help minimize FQPA impacts to agriculture, which in turn helps EPA/USDA meet its commitment to "provide a reasonable transition for agriculture" as mandated in Vice President Gore's memo to EPA/USDA on FQPA implementation. **Results**: It was reported that in 1999 North Carolina peanut farmers reduced their use of chemical pesticides from 1994 levels by over 106,000 pounds of active ingredient. A portion of the experiments were impacted by Hurricane Floyd which destroyed some plots and caused extremely variable results in others**. Status**: Project completed. A final report was submitted dated April 5, 2002.

Project No. X98457398

The Florida Minor Crop Profile Project ($72K) - A multi-partner (Florida Department of Agriculture and Consumer Services (FLDACS), University of Florida Institute of Food and Agricultural Sciences/ Cooperative Extension Service, Florida Fruit and Vegetable Association, Florida Farm Bureau, EPA, and Florida farmers/growers) project to compile information on pesticide use and pest management practices for selected minor crops in Florida (those minor crops that are not being addressed by National Agricultural Pesticides Information NAPIAP projects) to enable FLDACS, UF/IFAS and Florida minor crop growers to be able to respond to information needs for tolerance reassessment actions under FQPA and to identify viable "transitional" pest management strategies for minor crops where critical pest management problems are likely to result as FQPA is implemented. This project will focus on generating current and reliable information regarding pesticide use and pest management strategies on important minor crops that will enable agriculture to provide EPA information to make sound science-based decisions in its implementation of the FQPA and in the tolerance reassessment process. This project should also help minimize FQPA impacts to agriculture by giving regulators and extension staff better information regarding potential for alternative pest management strategies that may assist minor crop farmers in transitions that may be necessary as a result of FQPA impacts. **Results**: Seventeen crop profiles were completed and are posted on the USDA Crop Profile site at: <http://pestdata.ncsu.edu/cropprofiles/docs> Crop profiles were developed for snap beans, cabbage, beef cattle, celery, citrus (orange and grapefruit), sweet corn, cucumber, ornamentals, peanuts, bell peppers, potato, strawberry, squash, tomato and watermelons. A pesticide use survey for about 10 tropical fruit crops grown in South Florida (Dade County) was completed. Crop profiles are currently under review for mangoes and limes. Avocado has already been completed. **Status**: Project completed and final report submitted. Final report posted on EPA Region 4 Pesticide home page.

FY 99 No money was allocated for SAI awards.

FY 00

Project No. X97415501

Evaluating Producer Benefits from the Use of a Soil Applied Insecticide (chlorpyrifos) in Corn ($67 K) - Submitted by Mississippi State University. Experts do not think there is much, if any, benefit of applying chlorpyrifos and want to document efficacy, or lack thereof, in order to discourage growers from applying. Producers need critical information of the pest biology in order to make sound decisions, such as how often the pest reaches damaging densities, when the pest colonizes a field, and how long the prophylactic treatment provides control. Project will compare costs of soil applied treatments with treat-as-needed application based on field monitoring in three regions of Mississippi (Coastal, Central and Northern). **Status**: Date of Award was June 14, 2001. Ongoing project.

Project No.: X97415201

Application of Precision Agriculture Procedures for Stewardship of Soil Applied Pesticides used for Citrus Grown in the Florida Ridge Area. ($35K) Submitted by Florida Department of Agriculture and Consumer Services. Will fund remainder in FY 2001. Project proposes to evaluate a precision agriculture practice associated with an already established stewardship program. The technology will be used to locate, identify and abate applications in buffer zones (prevent ground water contamination). This application technology should fine tune this specific stewardship program and significantly reduce any risk of violations to the buffer zones with aldicarb applications and consequently reduce total amount of aldicarb applied. Technology will be adaptable to other soil applied insecticides. **Status**: Date of award was April 23, 2001. Ongoing project.

Project No.: X97417001
Appalachian Sustainable Agriculture Project ($64K) - Submitted by Mountain Partners in Agriculture. Project will focus on organic transitions involving Henderson, Buncombe and Madison counties in Western North Carolina. Both apple and tobacco farmers in these areas are looking for economically viable alternatives and organic tobacco and vegetable production may provide the solution, in part. The project will transition six area farmers from conventional to more sustainable practices. Earlier successes have been achieved with 18 area farmers who are in transition. Their farms are now serving as informal demonstration sites for others and have recently attracted the attention of area state legislators and researchers from the local Cooperative Extension Research and Experiment Centers. Support from EPA will enable expansion and continuation of program. **Status:** Date of Award was April 17, 2001. Ongoing project.

Project No.: X97415301
Electronic IPM Information Transfer System ($7,500) - Submitted by Delta F.A.R.M. Will result in development of a web site for Delta F.A.R.M. (SAI project funded in 1998) Will provide soil and water conservation BMP information and pesticide stewardship information for cotton, corn, milo, rice, and soybean farmers in Mississippi. Will provide a one-stop source of information about hazardous and solid waste disposal information. Will provide IPM technique and technology information and regulatory information. Farmers in Mississippi need one single web site that contains this information. Currently information is very scattered and often difficult to find. **Status**: Award date was May 30, 2001. Project completed. Final report submitted. Access the final project on the world-wide-web @ <www.deltafarm.org>.

FY 01

Project No.: X97430901
Workshops to Develop a Strategic Research and Education Initiative for Innovative Integrated Pest Management Practices in Southern Sweet Potato Production Systems ($49K) - Submitted by North Carolina State University. Sweet potatoes are the number one selling vegetable by Gerber Product Company, the nation's largest baby food manufacturer. Reducing pesticide risks to infants is a top priority for the Environmental Protection Agency (EPA). Sweet potato production is an

important agricultural business in the Southeast; however, sweet potatoes are considered a minor crop nationally. The top ranking States are, in order of economic value, North Carolina, Louisiana and Mississippi, Alabama. The goal of the project is to develop a collaborative multi-stakeholder strategic initiative for innovative integrated pest management research and education. The Wisconsin Irish Potato industry model will be used **Status:** Date of award was September 5, 2001. Three planning meetings have been completed. An interim final report has been submitted. A project extension was requested to expend remaining funds and enhance entomology report.

Project No.: X97439401

Reducing Pesticide Usage through Reduced Tillage and Transition to Organic Vegetable and Fruit Production ($43,826) - Submitted by Georgia Organics. Reduced tillage systems are growing within Georgia and have already shown considerable potential to reduce the number of pesticide applications through increased bio-diversity and overall improved plant health and, consequently, resistance to attach from insects and diseases. This project will take the already available on-farm successes and train other farmers. The project will also provide farmers interested in transitioning to organic production systems the knowledge to do so. In addition, the project will demonstrate technology available for organic farmers such as the vegetable no-till transplanter designed in Virginia for organic farms. This is a timely project in that the National Organic Standards were recently passed as well as the Georgia Organic Standards. There is increasing demand, not presently being met, for organic produce in Georgia. **Status**: Date of award was September 26, 2001. Ongoing project.

Project No.: X97447702

Development and Implementation of a Hand-Operated, Metered, Closed System Applicator Di-syston (disulfoton) in Fraser Fir Production in Western North Carolina ($21K) - Submitted by North Carolina Cooperative Extension and North Carolina State University. Di-Syston 15 G is used on 65 percent of the Fraser fir acreage in western North Carolina. Many growers currently apply this pesticide with a spoon and a bucket or some other homemade, handheld device. EPA is currently reviewing disulfoton under the *Food Quality Protection Act of 1996*. A major concern with granular Di-Syston is too great exposure to the material by workers. The margin of exposure with the bucket and spoon application is considered too great. EPA is, therefore, interested in seeing the development of a closed system applicator for Di-Syston 15 G to reduce worker exposure. This project would modify the Select-A-Feed Jr. Marathon applicator into a closed system applicator for Di-Syston G with a reusable valve for transmitting the material from a bulk container to the applicator device. The project would field test the unit for efficacy and accuracy. **Status**: Date of award was July 9, 2002. Project ongoing.

Project No.: X97435301

Velvetbean Rotation to Transition Farmers to a More Sustainable System ($50K) - Submitted by Clemson University (South Carolina). The inclusion of green manure crops, such as velvetbean (vb) in current southeastern cropping systems will reduce pesticide use across a wide spectrum of vegetable and field crops. Velvet bean can control nematodes without methyl bromide. In pastures with severe

weed problems, rotation with vb can provide weed control as well as forage. This project will seek to expand the use of vb among South Carolina farmers, especially farmers in transition to more sustainable systems by demonstrating the value of vb in pesticide reduction and increased yield. Cabbage is one example of vegetable crops that could benefit from vb rotation. Rotation with vb will reduce the annual cost of broadcast fertilizer, lime, herbicides, and insecticides; estimated at $282 per acre. Companion projects in Georgia will complement the South Carolina project. This is available technology with known potential that can be rapidly adopted with some additional research and demonstration. **Status**: Date of award was September 17, 2001. Project ongoing.

Project No.: X97415201

Stewardship Demonstration of Precision Application Technology for Soil-Applied Pesticides ($35K) - Submitted by Florida Department of Agriculture & Consumer Services. Also received $35,000 in FY 2000. This is a continuing project. The Florida Department of Agriculture is investigating the use of global positioning systems and precision farming in the application of pesticides that require buffer areas from drinking water wells and are restricted from being applied on certain vulnerable soils. The study will adapt and use developing precision agriculture technologies to control the application of soil-applied pesticides such as aldicarb so that the soil-applied pesticide is not applied inside buffer areas, insuring that drinking water wells adjacent to the citrus groves in the Florida Ridge area are protected from possible groundwater contamination. **Status**: Date of award was April 23, 200l. This is a continuing project from 2000.

Project No.:X97437601

Biorational Products for Powdery Mildew and Insect Pest Management in Nursery Crops ($100K) - Submitted by Tennessee State University. Project will identify and promote the use of biorational (oils and soaps) products as alternatives to traditional pesticides in disease and insect pest management in nursery crops. The biorational products will be compared with traditional fungicides and insecticides. Current control measures in nursery crops rely heavily or totally on chemical pesticides and prophylactic applications of pesticides to control foliage diseases and insect pests. Intensive use of traditional pesticides can destroy or disrupt non-target microflora, potentially leading to the development of new disease and pest problems. Applicators and laborers may be exposed to pesticides during frequent pesticide applications. In addition, homeowners are potentially exposed to pesticide residues on the foliage of ornamental plants during purchase and planting. Losses due to the Food Quality Protection Act have focused primarily on food crops, however a visit to the McMinnville area of Tennessee by the Region 4 SAI Coordinator emphasized the need to assist the nursery industry in alternative pest management options. **Status**: Date of award was March 4, 2002. Project ongoing.

Project No. X9744602

Evaluation of Emerging Pests in Peaches Associated with Withdrawal of Organophosphates ($49K) - Submitted by Auburn University (Alabama). The cancellation of the organophosphate methyl parathion which was the dominant peach insecticide has negatively impacted the economics of peach production in the southeast. Further loses of the organophosphates in peach pest management are

anticipated. The result of the loses is a changing pest population with emerging pests previously controlled with broad spectrum organophosphates. This project would investigate peach pests likely to attain major pest status in new systems such as stinkbugs, tarnished plant bugs, mites, and Oriental fruit moths. Control options such as trap crops, pheromone mating and increased use of pyrethroids, new soft chemistries, oils and insect growth regulators will be evaluated for efficacy against emerging pests. **Status**: Date of award was April 17, 2002. Project ongoing.

FY 02

Project No.: X97453002
Evaluation of Integrated pest Management Practices in Urban Turfgrass, Gainesville. **($67K)**- Submitted by University of Florida, Gainesville. This research and demonstration project will assess current pesticide use and pest management tactics in Florida golf courses and residential lawns, and compare the benefits of adopting an IPM program to conventional calendar-spray programs. We expect to demonstrate to our cooperators and the Green Industry that there is a positive difference in the overall environmental and financial cost between the two management strategies. As a result, cooperators would continue the IMP practices and recommend that their colleagues participate, as well. In particular, we expect to see reduced exposure of maintenance staff, golfers, wildlife, and residences located on or near turfgrass facilities to pesticides, and less water contamination in areas where IPM is practiced. **Status**: Date of award was September 25, 2002. Project ongoing.

Project No.: X97156902
Using an Integrated Management Program to Reduce Chemical Acaricide Use in Honey Bee Colonies and Prevent Hive Product Contamination **($97,586)**- Submitted by the University of Tennessee. Honey bees are important pollinators of many major crops and provide other valuable commodities. But, almost all bee colonies are treated with chemical acaricides containing fluvalinate and coumaphos to control the *Varroa* mite. Chemical contamination of honey and other hive products is possible. A collaborative effort involving University of Tennessee beekeeping experts and the Tennessee Beekeepers Association is proposed to demonstrate to the state's beekeepers that *Varroa* can be managed without chemicals, using a combination of tools and tactics. **Status**: Date of award was October 7, 2002. Project ongoing.

Project No.: X97459102
Engineering Next Generation pest Control for IPM Compatibility in Citrus **($118,302)**- Will assess the potential non-target impacts of pesticides commonly used in citrus production in Florida by screening materials for residual toxicity to representative of four different orders of beneficial insects in the laboratory. Will educate citrus growers on the compatibility, or lack of compatibility, of particular pesticides with an IMP approach to citrus pest management that minimizes environmental impact and the potential viability of alternative management tactics. **Status**: Date of award was September 30, 2002. Project is ongoing.

Project No.: X97458902

A Marketing Approach to Increase Use of a Rootworm Advisory in Peanuts ($93,040)- Submitted by Center for Agricultural Partnerships, Inc. and North Carolina State University.Will increase use of a rootworm advisory among peanut growers. Will evaluate effectiveness of marketing methods in increasing awareness and use of the southern corn rootworm (SCRW) advisory. Current management of SCRW in peanut production in North Carolina relies on extensive use of organophosphate insecticides. Approximately 65 % of peanut acreage is treated with organophosphates for SCRW. Researchers have demonstrated that only about 6% of the acreage actually needs an insecticide application to prevent economic rootworm damage. **Status**: Date of award was September 26, 2002. Project ongoing.

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